Quick Answer: How to Hire and Retain Top-Notch Data Scientists

The ability to hire data science and AI talent has improved moderately over the past few years but continues to be challenging. Enterprises especially struggle to hire and retain senior and particularly gifted junior talent. Here we share best practices gathered from some of our advanced clients.

Quick Answer

How Can We Hire and Retain Top-Notch Data Scientists

- Most top-notch data scientists are strongly driven by solving novel challenging problems. They also often want the opportunity to make a difference. They are typically less driven by classical career progression, such as managing large teams.

- Data scientists also require, more than others, an innovative culture, and they are extremely sensitive to potential political resistances and business adoption risks.

- Therefore, it is essential to market the organization's vision for AI appropriately for attracting the best hires. For example, maintain a list of enticing business problems yet to be tackled using AI/data science and articulate the potential impact of the data scientist's work.

- There are new mechanisms available for hiring junior top talent (esp. hackathons). And there are plenty of options available to give data scientists worthwhile incentives apart from salary increases and classical career progression (e.g., sabbaticals, bridge assignments, teaching opportunities, conference attendance, further training, own student interns and special projects).
More Detail

The situation of finding data scientists has much improved over the past decade. Yet there are still many scenarios where hiring and retaining them can be a daunting task.

First, hiring junior data scientists has improved: Most computer science grad programs allow graduate students to focus heavily in artificial intelligence and machine learning, which form a major foundation for data science.

However, hiring really great junior data scientists is quite difficult: The battle for junior data scientists is fiercely led by IT and internet giants, which offer a wider variety of project options to pursue within the organization, easy lateral movements, hefty salary packages and stock options. They also incentivize research and development and provide the tools and resources to support this work.

Even more so, hiring top domain-specialized senior data scientists is very difficult: They are the most rare and picky breed of data scientists and not only command high salaries, but often even avoid permanent positions at other locations and are choosy of the type of business challenges they want to solve.

- Allow lateral movement into different projects, teams and lines of business.
- Incentivize research and development. In fact, create retreats for data scientists in their role where they can work temporarily on relevant cutting-edge projects of their choice.
- Be honest during the hiring process. Inform candidates of the time they will spend on each activity — data engineering, model development and deployment and so on.
- Communicate openly on business requirements and give room to data scientists to bring in their perspective.
- Note that many aspects in hiring talent will be crucial for retaining them as well (e.g., marketing a good culture and providing transparency of upcoming projects and business needs).

Experienced data scientists become even more in demand as clients realize that quantity cannot compensate for the lack of quality and expertise when it comes to skills. This is reflected in swiftly rising salaries, as shown in Figure 1.
Traditional approaches to finding and hiring data scientists such as recruiting agencies, referrals or job positions are becoming less effective. They bring in an element of uncertainty, prolong the hiring process and cause hiring fatigue for the organization. Many advanced clients increasingly rely on more modern and adjusted principles of AI recruitment.

**Use Hackathons and Internships for Hiring Top Junior Data Scientists**

Most Junior graduates are fairly inaccessible to most recruiters, but hackathons offer a great opportunity to find them while they are still at college or university. These hackathons are ideally conducted over a weekend or during summer or winter breaks. Involving your senior staff as mentors/coaches provides an excellent opportunity to observe problem-solving skills, teamwork abilities, and soft skills such as communication, moderation, presentation, delegation and so forth.
Expert tip: Be clear that the kind of challenge presented in the hackathon is relevant to your hiring needs.

These traits can be discovered in a very realistic scenario while solving a practical problem. Senior staff can observe who are the best drivers and motivators and who are the candidates that show promise. Normal recruiting processes are unlikely to unearth any of these traits.

Of course, when it comes to the concrete hiring, you also want to understand more from the candidates to assess their soft skills. Here are a few questions to address this:

- Where do you see your career aimed at? Is it more building data science products (also helping operationalize them), researching, leading data science teams, or helping the business strategize their data science objectives?
- How have you understood our AI business goals? Give us a walk-through!
- How would an ideal structure for you look like — individual contributor or in a team, and what hat would you like to wear?
- What’s your approach to problem solving in case you find no answers say on stack overflow?
- How would you measure the success of your models for the business?
- What would you have done differently in your previous job role?

Once you identify the best candidates through hackathons, you can offer them short-term internship opportunities. Internships are a great way to find an effective mutual fit and at the same time get the talent excited about the kind of business problems they can solve. Further, they offer a chance to proactively identify cultural mismatches before a permanent hiring decision is made.

**Market Your Own Goals**

Most data scientists thrive on a large diversity of projects and future staff members. Because hiring top-notch data scientists is so difficult, you must devote significant effort into giving your candidates substantial insight into:
1. **Big problems to solve**: Here storytelling is key. You could reuse the same sort of storytelling and convincing that you may already have developed for your internal stakeholders (minus the not-to-be-disclosed information). You might even create some sort of lighthouse talks on YouTube or other streaming platforms to attract the most talented people across all skill-levels, worldwide.

2. **Organizational culture**: Connect your hiring process with your own set of organizational virtues or values and have a progression matrix in line with it. As data scientists see themselves as innovators, be prepared to present the innovation culture of your organization.

3. **Track record**: This might include (if any), what select problems you have already solved in the realm of AI and how successful you were and what problems are on the roadmap. This ideally should include a larger societal or economical impact presentation.

4. **What kind of team you already have assembled**: This includes introducing permanent staff to applicants (ideally in person — at least some of them), but also the list of the external network, which includes peer organizations, partners, coaches and other external service providers.

   In short: the more transparent you are here, the more chances of becoming the most attractive employer — all other things being equal.

**Create Special Perks, Especially for More Senior Data Scientists**

Mid-level and senior data scientists will seek great existing teams from which they can learn even more. They are also more attracted by a diversity of meaningful projects than junior candidates. And more so than junior data scientists, many will also like to see strong academic relations, where they could have the option to conduct teaching appointments. A few envision becoming a chief data scientist, which is not to be confused with a head of data science. And note, we know of organizations that have more than just one chief data scientist (e.g., maybe one each for the industrial, consumer and corporate parts).
Even junior data scientists will appreciate the opportunity to present project results at various conferences. Clearly allowing your own data scientists to attend events will increase your presence. This helps in retention but also in marketing your organization as an attractive employer in the field of AI/data science. Even better for significant accomplishments are sabbatical leaves (from weeks to even months) for data scientists to pursue their own research projects.

Organizations need to strongly emphasize the opportunities for continuous learning. Actions to take include:

- Setting up or tying with virtual learning programs
- Outlining a budget for upskilling initiatives at the discretion of the employee
- Hosting meet-ups with AI experts
- Incentivizing research and contributions to academia and open source
- Adding the ability to present at AI conferences

When these initiatives are combined with a career progression roadmap, it will send a message that the company truly cares about continuous learning.

**Domain Specialization**

The more you target senior data scientists, the more their domain specialization will become important.

*Data scientists are problem solvers. The level of seniority will be mostly determined by how much end-to-end experience they will have in the relevant business application domain.*

Here, one must differentiate between various application branches of data science:

- Industrial data science
- Consumer data science
- Corporate data science
Industrial data science is more related to analyzing machine data. It also involves signal processing and principles from control engineering, understanding in robotics or autonomous vehicles.

Consumer data science requires significantly more understanding of how to build customer profiles, customer segmentation, cross-selling, churn and fraud prediction and how to gauge customer profitability and optimize marketing campaigns. In many regions of the world, upcoming privacy laws must be adhered to, which requires substantial knowledge in privacy-preserving techniques (see Three Critical Use Cases for Privacy-Enhancing Computation Techniques). Also, the notion of responsible/fair AI is becoming increasingly important.

There is still yet another branch, which could be called corporate data science, involving internal corporate use cases ranging from human capital management (see Infographic: Artificial Intelligence Use Case Prism for HCM Technology), ERP, corporate finance and demand prediction.

In addition, some data scientists will simply be stronger in the early phases of AI projects, where ideation, scoping, and storytelling are most important. Other data scientists are more strong in the overall process and able to lead large projects end-to-end. Ensuring they are surrounded by the right talent (such as AI engineers and data engineers) to operationalize their ideas is a critical aspect of retention. Understanding which skills exactly are needed will be crucial for optimally balancing out the team skill set, avoid gaps and also redundancies and common frustrations.

**Recommended by the Authors**

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